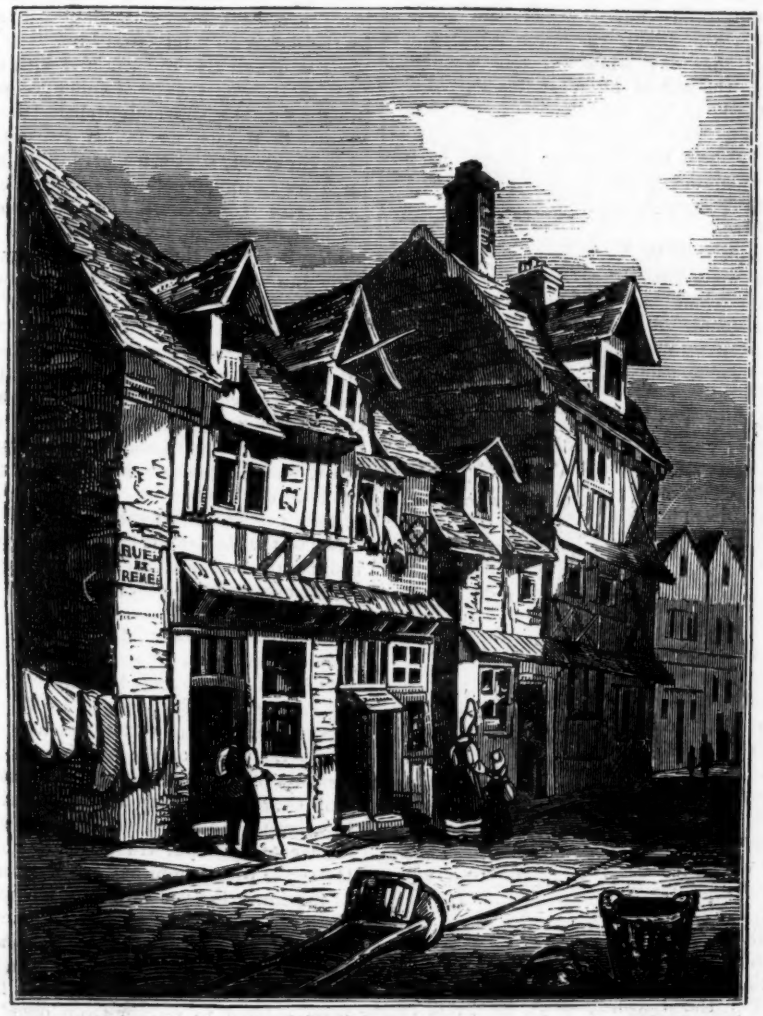
THE

Saturday Magazine.

No. 270. SEPTEMBER 17TH, 1836. Price One Penny.

UNDER THE DIRECTION OF THE COMMITTEE OF GENERAL LITERATURE AND EDUCATION APPOINTED BY THE SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE.

THE TOWN OF DIEPPE, IN FRANCE.



A STREET IN DIEPPE.

Dieppe is a French sea-port town of considerable importance, situated upon the northern coast of France, and looking out upon the English Channel in the direction of Beachy Head. It is at present comprised within the department of the *Seine Inférieure*, or Lower Seine; under the old system it used to constitute a portion of the province of Normandy.

Dieppe is one of those French ports between which and our own shores there is a considerable intercourse kept up; it lies as nearly as possible in a direct line between Brighton and Paris, and is therefore frequently chosen by tourists as the point to which to direct their steps immediately upon departing from England to visit the French capital. The route from London to Paris through Brighton and Dieppe is shorter than that which passes through Dover and Calais, but it is less frequented—probably because it requires a much greater extent of sea-voyage than the other; for the distance between Brighton and Dieppe is more than twice as long as that between Dover and Calais. There is this advantage, however, often urged in favour of the former route, that it affords the traveller an interesting journey from Dieppe to Paris through a rich and highly-cultivated country, and enables him, if he have time to loiter upon the road, to visit some of the most remarkable towns in Normandy at the expense of only a slight deviation from the direct line;

—whereas, by the latter route, he is subjected to a wearisome passage, through a comparatively dull and uninteresting district.

The origin of Dieppe is not very remote. Some French writers refer it to the ninth century, and ascribe the foundation of the town to the Emperor Charlemagne, whom they suppose, when he visited this part of the coast of his empire, to have observed how much it was exposed to hostile attacks, and thereupon to have ordered the construction of a fort upon the beach; but others treat this account of its origin as a fiction. The name of Dieppe, however, occurs several times in the chronicles of Normandy, in the course of the eleventh century; once especially, when it furnished aid to Duke William in his expedition for the conquest of England. In 1188, the English King, Henry the Second, built a castle upon the same hill as that on which the present fortress stands; but this was no safeguard to the little town which was rising beneath its walls, when in the course of events it became exposed to the chances of war. Richard the First returned from his captivity in Germany, in 1194, and the duchy of Normandy was at once the scene of hostilities between him and his rival Philip Augustus, of France. The "lion-hearted" monarch having been defeated in a battle under the walls of the castle of Arques, in the neighbourhood of Dieppe, his adversary rendered himself master of this part of the province, and inflicted a cruel vengeance upon the town. Not content with burning it to the ground, and destroying its shipping, he carried away the inhabitants into the interior of France, to prevent them from re-assembling and raising it from its ashes.

In 1196, however, Dieppe and Arques, with their dependencies, were restored to Richard, who almost immediately afterwards yielded the former to the Archbishop of Rouen, as a part of the compensation which he was forced to make to that prelate for the injury which he had inflicted upon him by erecting the Château Gaillard upon his territory,—a fortress celebrated in the history of Normandy during the middle ages.

The principal occupation of the people of Dieppe, at this period, was in the fisheries, which they had cultivated with assiduity ever since the first settlement of their town; and it was in this pursuit that they acquired that character of hardihood and daring, and that love of maritime enterprise, for which they have always been distinguished. They exerted their industry with energy, and their town recovered, with surprising rapidity, from the calamities which it had suffered at the hands of Philip Augustus. In that brilliant naval victory, the first that England, as a nation, obtained,—in which the fleet of Edward the Third defeated that of the French monarch, Philip the Sixth,—the ships of Dieppe took the lead; and their admiral distinguished himself so much, as to draw down the marked resentment of the conqueror, who caused him to be made prisoner, and hanged, and then sent a detachment of English and Flemings to destroy the harbour. But the injuries which the town suffered, were repaired with the same zeal and rapidity which had been displayed on the former occasion; Philip himself contributed to restore it by exempting the inhabitants, in 1345, from the payment of all taxes and dues, for the purpose of enabling them to rebuild their walls. In the year 1383, they had so far recovered their strength as to be enabled to fit out an armament for the protection of their fisheries against the oppressions which the English in Calais were constantly practising on them; and they were on this occasion authorized to levy a certain tax upon all the herrings taken between the Seine and the Somme.

In the beginning of the following century, Dieppe was again attacked both by sea and land; but the inhabitants made a gallant and effectual resistance. Soon afterwards it fell into the hands of Henry the Fifth; but in 1436, after the death of the celebrated Duke of Bedford, to whom Henry had committed the regency of France during the minority of his son Henry the Sixth, the French retook it by surprise. Six years afterwards it was besieged by the English under the famous Talbot, who erected on the suburb (as it then was) of the Pollett, the formidable fortress known by the name of the Bastille. But in the following year, the French, in their turn, became the assailants, under the conduct of the dauphin, afterwards Louis the Eleventh; and the Bastille yielded to their arms, after a murderous conflict. Not a vestige of this fortress now remains; it was levelled with the ground in 1689; and it is said to have been a defence so strong, and in a situation so well chosen, that the celebrated Vauban honoured its memory by lamenting its destruction.

In spite of the effects of war, Dieppe continued to increase in strength and importance; in 1555, its inhabitants, unassisted by their king, or any part of their countrymen, having armed their merchant-ships, attacked and defeated in the channel a Flemish fleet of twenty-four ships of war; the contest, however, was a sanguinary one, and the victors suffered severely, losing many vessels and having a portion of their town destroyed by fire. They were commanded upon this occasion by the celebrated protestant Admiral Coligny, whose murder, seventeen years afterwards, in Paris, was the prelude to the memorable massacre of St. Bartholomew.

The people of Dieppe, indeed, from the earliest dawn of the Reformation in France, had been zealous in its support; and they were already prepared to go to the utmost length in its behalf, when the Scottish reformer, John Knox, landed in their harbour on his way from Scotland to Geneva. The presence of such a man produced a strong sensation, and Dieppe continued for two years in open rebellion to the court; but the capture of Rouen in 1562, at the beginning of the great religious wars which troubled France for nearly the whole of the remaining portion of the sixteenth century, so alarmed the citizens of Dieppe, that they obtained an English garrison from Queen Elizabeth. They were obliged, nevertheless, to surrender to the royal troops in the course of the year. Owing to the wisdom and moderation of the governor of the town, the protestants of Dieppe escaped unhurt from the massacre of St. Bartholomew. They counted in their number the majority, nearly the whole, indeed, of the inhabitants of the town, and they continued stedfast in the reformed faith, though they were obliged to refrain from openly declaring their feelings, until the accession of Henry the Fourth, in 1589, afforded them an opportunity of so doing. When that monarch retreated with his handful of troops before the victorious forces of the League, which had been formed by the Catholic party for the purpose of excluding him from the throne, he sought shelter within the walls of Dieppe; so desperate were his fortunes, that he regarded the town as his last place of refuge, and even at one time contemplated availing himself of the opportunities which it afforded to escape into England. He was dissuaded from this design by the Marshal Biron; and he then proceeded to strengthen the castle of Arques, taking up a position with his little army in its neighbourhood. The Duke of Mayence, who commanded the Leaguers, soon

arrived, and not liking to attack the king in his intrenchments, he laid siege to the suburb of Pollet, thinking to gain possession of the town, and thereby to cut off Henry from all chance of escape. He divided his army for this purpose into two portions, one of which assaulted the town, and the other the position occupied by the king; both were repulsed, and the duke then concentrated his whole force in an attack upon Arques. A severe contest ensued, which terminated in a brilliant victory in favour of the king.

There is but one event of importance which remains to be noticed in the history of Dieppe, and that is the most signal calamity which was ever sustained by the town,—we allude to its bombardment by the English in the year 1694, during the war which broke out after the revolution, between William the Third and Louis the Fourteenth. The English fleet being foiled in an attack upon Brest, bombarded several towns upon the French coast; among them was Dieppe, which suffered so severely, that it could not recover from the infliction till after the peace of Ryswick in 1697. "Within the short space of thirty hours," says a French writer, "the English threw in 3000 shells and 400 balls, and made use of a machine, charged with all manner of combustible materials and bars of iron, in the view of setting fire to the two wooden jetties, in which attempt, however, they were foiled." The appearance of the town at a period shortly subsequent, is thus described by an English traveller who saw it in 1701.

These preparatory steps being over, we had our dinner, and walked into the town, which, being bombarded last war by the English, is hardly yet rebuilt. What houses are up are lofty, so that the town is almost new, and will be a fine one when finished, though not large. We saw the ruins of many houses; for the bombardment was so violent and successful, that few were left standing or entire. The great church and castle suffered in some parts, and other churches were quite demolished. The streets are large and straight, and the buildings uniform, generally of the same height, and all of a sort of white brick; the whole very open to the sea, and as liable to bombardment as before, the castle being situated on so high a cliff, at the further side of the town next the land, that the guns there mounted can never keep off bomb-vessels, and the nearer these come to the town, the less power will the castle have upon them, being still more in proportion above the vessels. There is a good quay, and the harbour into which the river empties itself comes into the heart of the town, but the ships at low water lie all aground. The land-side is fortified with double ditches and ramparts.

Dieppe is situated on a low tongue of land, but is backed by a lofty hill, on which stands the old castle,—a confused jumble of oddly-assorted buildings, but altogether a striking object when seen from the sea. The general impression produced upon a stranger approaching the town by water is very strange, there is so much novelty and singularity in the scene which meets his eye.

To embark in the evening at Brighton, (says Mr. Dawson Turner,) sleep soundly in the packet, and find yourself, as is commonly the case, early the next morning, under the piers of this town, is a transition which, to a person unused to foreign countries, can scarcely fail to appear otherwise than as a dream; so marked and so entire is the difference between the air of elegance and mutual resemblance in the buildings, of smartness approaching to splendour in the equipages, of fashion in the costume, of the activity of commerce in the movements, of newness and neatness in every part of the one, contrasted in the other with a strong character of poverty and neglect, with houses as various in their structure as in their materials, with dresses equally dissimilar in point of colour, substance, and style, with carriages which seem never to have known the spirit of improvement, and with a general listlessness of manner—the result of indolence, apathy, and want of occupation.

The entrance to the harbour of Dieppe is very narrow, and lies between two long stone piers; on one of these stands a crucifix, which has "the negative merit of being the largest in France," as Dr. Dibdin says. This entrance leads to a stone basin, capable of holding 200 vessels; it is full of water at flood-tide, but at the ebb it is nearly dry, exhibiting little more than a sheet of mud, with a small stream meandering through it. The town is built round the harbour, and is, generally speaking, conspicuous for the regularity of its streets, and the uniformity of its buildings. When restored, after the bombardment of 1694, it was rebuilt on a fixed plan, conformably with the directions of a royal ordinance; the architect employed on the occasion gave general dissatisfaction, and is said to have obtained the nickname of *M. Gâteville*, or "Spoil-town." Great inconveniences arose from the enforcement of his arrangements; and sixty years after they had been carried into effect, an order in council was procured by the inhabitants, allowing them to make some alterations which they considered essential to their comfort. Dr. Dibdin remarks, that there is a great waste of brick, stone, and mortar, and that some of the largest buildings are situated in the gloomiest courts;—"it should seem," he says, "that the houses were built expressly for noblemen and gentlemen, although they are inhabited by tradesmen, mechanics, and artisans, in apparently very indifferent circumstances." Another traveller, after noticing that the town presents a very agreeable and romantic appearance to strangers, observes that it is cut up into a number of distinct divisions by canals, drawbridges, and bastions, as if to intercept the progress of an enemy. "The best houses, too, are shut up in close courts and high walls on the same principle, that is, to stand a siege in the good old times."

The most lively part of the town is the quay, which is constantly crowded, and which displays something of the activity of commerce, though there seems to be "more bustle than business." The houses on the quay, and in some of the streets leading to it, have a more characteristic appearance than those in the other parts of the town; there is a great diversity in their forms and materials, some being of brick and stone, others of gray flint, and many of plaster, with their timbers uncovered, and painted of different colours. The steep, sharp-pointed roofs, and the large projecting windows which they frequently exhibit, render them curious objects to a stranger's eye, and contribute not a little to the picturesque character of the view which the harbour presents, and which Dr. Dibdin thus describes.

As we approached the inner harbour, the shipping and the buildings more distinctly presented themselves. What a scene (said I to my companion) for our Calcott! The harbour is large, and the vessels are entirely mercantile, with a plentiful sprinkling of fishing-smacks,—but the manner in which the latter harmonized with the tint and structure of the houses,—the bustle upon shore,—the casks, deal planks, ropes, and goods of every description upon the quays,—all formed a most animated and interesting scene. The population seemed countless, and chiefly females; whose high caps and enormous ear-rings, with the rest of their paraphernalia, half persuaded us that instead of being some few twenty-five leagues only from our own white cliffs, we had in fact dropped upon the Antipodes!

Dieppe is not free from the reproach which is most commonly urged against French towns. "The town is a picture to look at," says a traveller; "it is a pity that it is not a nosegay, and that the passenger who ventures to explore its nooks and alleys is driven back again by 'a compound of villanous smells,' which seem to grow out of the ground." Malte Brun says, that there are sixty-eight fountains in Dieppe, and Dr. Dibdin suggests, that if some of the limpid

streams which issue therefrom were directed to the cleansing of the streets, (which are excellently well-paved,) the effect would be to render them both more salubrious and more pleasant.

Among the public buildings of Dieppe, the castle is the first object of attention. It stands, as we have already said, on a steep hill; its appearance is imposing, as well from its position as from its high walls flanked with towers and bastions. Mr. Turner says, that in its general outline, this castle bears a resemblance to that of Stirling, but has not the same claims to attention, in an architectural point of view. It has not the slightest pretensions to regularity or design; but the very irregularity and confusion of its towers, turrets, and roofs, is said to produce a pleasing and picturesque effect, which is much heightened by the appearance of a bridge thrown across a ravine near the entrance, upon a row of lofty arches, looking, at a distance, like the remains of a Roman aqueduct. There are two churches in the town worthy of notice,—St. Jacques, which was begun about 1260, and St. Remi, which is a building of the seventeenth century.

The population of Dieppe amounts to about 20,000. The inhabitants in general are not wealthy; "most of the upper windows," says Dr. Dibdin, speaking of their houses, "are destitute of glass, but are smothered with clothes, rags, and wall-flowers." But, as the same writer remarks, if they are not rich they seem happy, and are in a constant state of occupation.

A woman sells her wares in an open shop or in an insulated booth, and sits without her bonnet,—as, indeed, do all the tradesmen's wives,—and works or sings as humour sways her. A man sells gingerbread in an open shed, and, in the intervals of his customers coming, reads some popular story or romance.

To a painter, (says Mr. Turner,) Dieppe must be a source of great delight; the situation, the buildings, the people, offer an endless variety, but nothing is more remarkable than the costume of the females of the middle and lower classes, most of whom wear their formidable caps with long lappets, entirely concealing their hair, red, blue, or black corsets, large wooden shoes, black stockings, and full scarlet petticoats of the coarsest woollen; pockets of some different die attached to the outside, and not uncommonly the appendage of a key or a corkscrew; occasionally, too, the colour of their costume is still further diversified by a chequered handkerchief and white apron. Even on Sundays, or feast-days, bonnets are seldom to be seen, but round their necks are suspended large silver or gilt ornaments, usually crosses, while long gold ear-rings drop from either side of their head, and their shoes frequently glitter with paste buckles of an enormous size. Such is the present costume of the females at Dieppe, and throughout the whole of the Pays de Caux; and in this description the lover of antiquarian research will easily trace a resemblance to the attire of the women of England in the fifteenth and sixteenth centuries.

NEWSPAPER LITERATURE.

No. VI.

HAVING, in our last, sketched a slight outline of the present state of Newspaper Literature throughout the world, we will now proceed to describe the entire machinery of an English newspaper; taking for our example, the daily morning press of London,—of which, it is almost superfluous to remark, that it far out-distances all competitors in other countries, whether we regard its mechanical execution, or the talent and vigour of its literary composition. First in order and in importance, the responsible Editor, or conductor, claims our notice. The duties of this individual are undoubtedly of a highly-responsible nature; and a sound and calm judgment, a general knowledge of affairs, but, above all, a mind uncramped by any eccentric dogmas, whether political or religious, are indispensable qualifications for a correct performance of those duties. We must not, however, suppose that it is required of newspaper editors to possess the versatility of acquirement necessary to treat on every subject, in the manner which the improved state of science in this age requires. Such is not the case. The conductor of a London daily newspaper frequently does not write more than a single article in each number of his paper; for, in the establishment of the leading journals, a separate, but subordinate, editor is intrusted with the task of watching, and commenting upon, the progress of foreign affairs; and writers of eminence are also attached to the paper, and are paid liberal salaries, to furnish occasional contributions on questions of jurisprudence, commerce, &c. These latter do not take any active part in the management of the paper, but furnish their communications whenever any subject with which they are conversant falls beneath their notice.

But this is not the only assistance which the principal editor receives. A *sub-editor* is employed to prepare the great bulk of the miscellaneous contents of the journal: it is the duty of this sub-editor to make selections from the provincial and contemporary journals, and, where necessary, to abridge such portions of their contents, as appear to him of sufficient general interest to merit insertion, but are too lengthy in their original form for that purpose.

Another very material aid to the columns of a London newspaper at the present day, is the correspondence with which it is supplied from foreign countries. This is generally written by persons also in the regular pay of the newspaper-establishment; and no expense is spared in obtaining early information*, by means of extraordinary expresses, &c. The recital of passing events is not, however, the only merit of this correspondence: sketches of the manners and customs of the people, the peculiarities of soil and climate, &c., are frequently described with a minuteness and discrimination which adds largely to our previous knowledge of the localities they refer to. The extent to which the practice of reporting the debates in Parliament is now carried, renders it further necessary for an establishment such as we have now under consideration, to retain in constant pay five or six expert reporters, whose numbers are increased during the Parliamentary Session to fifteen or sixteen. These individuals are necessarily men of education; and when their services are not required in the galleries of the Parliament Houses, they act the part of valuable auxiliaries to the editorial department, by furnishing reviews of books, notices of concerts, theatrical novelties, &c.; and not unfrequently what are termed *light articles*, of considerable merit. Some of them also furnish reports of the proceedings in the Assize and other Law Courts (for which, being very often students for the bar, they are peculiarly qualified.)

Finally, it is no part of the duty of a London editor to take reports of any of the multitudinous public meetings, or other events, with which the columns of his journal are constantly furnished. These, when not supplied by one of the regular reporters of the establishment, are furnished by a class of men, whom we cannot better describe, than by the designation of *newspaper hacks:* to the initiated in these matters, they are known as "penny-a-line men,"

* In the debate on the Newspaper Stamp-duty, in the House of Commons, a few nights since, Sir Robert Peel mentioned instances in which the government had received the first intelligence of most important events which had occurred on the continent, through the *Newspapers;* whose conductors had, by their arrangements, outstripped the government couriers, in conveying the news to this country.

a title which has its origin in the circumstance, that one penny, or thereabout, for each line of print, is the usual remuneration they receive. These individuals attend, and take reports of, all proceedings at the police offices; and they have a marvellously quick ear for "dreadful accidents," "shocking catastrophes," &c., of which they often gather the particulars with more avidity than judgment; and, hastily committing all they can learn upon the subject to paper, copies are readily multiplied by means of a small writing-machine, now in general use, and are sent round to each of the daily newspapers. The communications thus furnished, are only paid for when, and to the extent that they appear in print; and it very frequently happens (particularly during the Parliamentary Session), that for weeks together they labour in vain: indeed, the erroneous and defective state in which their information is conveyed, oftentimes renders an editor cautious in admitting their statements into his columns.

With this detail of the *literary* machinery of a London newspaper before him, the reader may, without difficulty, comprehend how it is, that such ability is generally shown in treating of subjects essentially different in their nature; and which renders a portion of its columns sometimes fully equal to the specimens of essay-writing produced in what has been called the Augustan age of literature in this country.

But, to return: with all these aids, we still leave the editor of a daily newspaper a very important task to perform. It is his province to regulate the materials thus furnished to his hands—to form them into one harmonious whole—to watch that one portion of his matter does not present any incongruity to the remainder—to exercise a vigilant care to exclude libellous or improper communications, and not to permit individual malice to gratify its resentments under the cloak of public utility; above all, while he lays down a fixed *principle* of action, and keeps that principle steadily in view,—to shake off, as far as possible, any *individual* feelings or prejudices, which may, either directly or indirectly, narrow his views of, or tend to warp his judgment on, *public* questions. It must be allowed by all, that the proper fulfilment of these duties is no contemptible task; and it has been remarked, probably by one who had himself experienced the truth of the observation, that "there is no labour more destructive to health than that of periodical literature; and in no species of mental application, or even of manual employment, is the wear and tear of mind and body so early and severely felt." Another writer has descanted upon the subject in a humorous strain, and has certainly described some of the difficulties of a *Provincial* editor with graphic fidelity: he observes,—

An editor cannot step without treading on somebody's toes. If he expresses his opinion fearlessly and frankly, he is arrogant and presumptuous: if he merely states facts without comments, he dares not avow his sentiments. If he conscientiously refuses to advocate the claims of an individual to office, he is accused of personal hostility. A Jacknapes who measures off words into verse as a clerk does tape by the yard, hands him a parcel of stuff that jingles like a handful of rusty nails and a gimlet, and if the editor is not fool enough to print the nonsense—'Stop my paper, I won't patronize a man that is no better judge of poetry!' One murmurs because his paper is too literary; another, because it is not literary enough: one would have the type so small that a microscope would be indispensable in every family; another threatens to discontinue his paper unless the letters are half an inch long. In fact, every subscriber has a plan of his own for conducting a journal, and the labour of Sisyphus was recreation, when compared with that of an editor who undertakes to please all.

[To be continued.]

MITES AND JUMPERS IN CHEESE.

Most of the rare animals that are brought to this country, at great cost and trouble, are described and figured by naturalists with the utmost care and accuracy, and attempts are made to trace their habits, and to discover, if possible, the distinction between one species and another; but those creatures which we are in the habit of seeing every day, are, in many instances, ill understood, and frequently altogether unnoticed. Many parts of the natural history of the common house-fly are not satisfactorily explained, and perhaps few of our readers have a definite or accurate idea of the little creatures that are found in decaying cheese. These creatures are of two sorts, the mite, (*Acarus siro,*) and a little maggot, known commonly by the name of the *jumper*.

The cheese-mites are so extremely minute, as to appear like moving particles of dust; they are very quick-sighted, and when once they have been touched, it is curious to observe the cunning which they display, to avoid a second touch. They are extremely voracious, and will even prey upon each other; and they are so tenacious of life, that they have been kept alive for many months between the object-glasses of a microscope.

These mites, we all know, are found in myriads in cheese, but the *jumper* is quite another kind of animal; it is the *larva*, or maggot, of the small fly, represented in the engraving, much magnified. It takes its name from the peculiar mode in which it moves. When intending to spring or jump from one place to another, the head and tail are brought together, and the body forms a kind of ring; the two extremities are then suddenly parted, and the sudden jerk causes the creature to jump to a considerable distance. After remaining in this state for

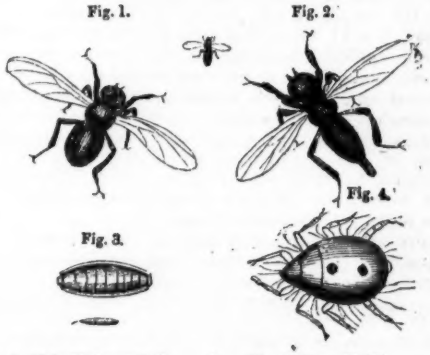


Fig. 1. Male Fly magnified.
Fig. 2. Female.
Fig. 3. Chrysalis.
Fig. 4. Cheese-mite magnified.

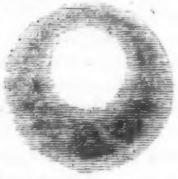
about three weeks, the little creature undergoes a metamorphosis, being changed into a chrysalis, or grub; fig. 3 is a magnified representation of this stage of its growth, the smaller figure underneath shows the natural size. In about a fortnight afterwards, the perfect insect makes its appearance in the form of a small fly, of the size shown in the engraving, between fig. 1 and 2. Fig. 1 represents the male fly, and fig. 2 the female, of course magnified; these differ much in the shape of their bodies, the female being provided with a lengthened instrument at the tail, called an *ovipositor* (egg placer), by means of which she places her eggs in any minute hole she can discover in the rind of the cheese, these are soon hatched, and become the small maggots we have already noticed, which immediately begin eating their way into the cheese, and soon become very lively *jumpers*.

THE YOUNG CHEMIST.

No. VI.

I HAVE another pretty experiment to show you, that there is no fire in the centre of the flame of a candle, and it is one that you can very easily make.

Here is half a sheet of writing-paper, I will hold it flat down upon the flame of this wax-candle, so as very nearly to touch the wick; only for a moment—then take it away; now look how the paper is scorched in the form of a *ring*—the *shell* of the flame has done this; but the paper is not a bit scorched in the *middle* of this ring, because there is no fire in the *kernel* or centre of the flame. The accompanying wood-cut shows this appearance.



I now wish to tell you something about the *heat* of flame.

This candle has been burning for about half an hour, and it therefore has a very long "snuff." I will now blow it out with a sharp and sudden puff of breath—see, the snuff remains red-hot, and the vapour of the wax rises plentifully for a little while.

What does this prove? Why, it proves that the heat of the snuff or wick, although it is quite, nay, more than sufficient to make the wax into vapour, yet it is not hot enough to fire the vapour so as to make flame.

Whilst this wick remains red-hot and glowing, if I gently blow upon it, or still better if I take the candle in my hand and suddenly raise it in the air, the chances are that I light it again—look, I have succeeded! What is the reason of this? Why the breath, or the air, has caused the wick to become much hotter than a red-heat; (just the same as if I blow or fan this bit of red-hot tinder, it becomes very much hotter,) and this greater heat is strong enough to make the vapour catch fire, and burn.

On a foggy night, when the flame of a link is accidentally blown out, if the end of the link happens to keep red-hot, you see it easily lighted again by the link-boy whirling it quickly in the air.

I can do the same thing with this bit of stick or roll of brown paper—if I light them and let them burn a little while, then blow them out and whirl them rapidly round and round.

Look at those dying embers in the fire-grate, they are scarcely visibly red-hot; I put some fresh sticks of wood upon them, which only become scorched, not burned with flame; I now use the bellows and blow gently, the embers get much hotter; now they are hot enough to kindle the vapour of the fresh wood, it bursts into flame. The same observations hold good in regard to a fire of coals.

You very frequently hear of thatched buildings, or ricks being accidentally set on fire, from the wadding of a gun incautiously discharged near them; the wadding is not hot enough to do this immediately, but by remaining in the thatch or hay for a little while, it is fanned into flame by a gentle breeze, and sad destruction of course ensues.

It must be evident to you, from these very familiar and every-day examples, that the heat necessary to produce a flame is very great—see, I cannot light the candle with this dull ember. I blow upon it so as to make it hotter, and I get a light directly: a dull red-hot cinder will not light the candle, a bright red-hot one will do so easily.

In his laboratory, or work-room, where a furnace is almost constantly at work, the chemist is in the habit of lighting a candle or lamp, with a bright red-hot coal from the fire, and when the vapour of the wax or of the oil is once fairly kindled, the flame rapidly gains a *white heat*, by the air rushing around it,—fanning it, as it were.

Well, then, you see it requires a great deal of heat to make a flame, and such being the case, suppose that I take heat away from it, or, in other words, *cool* it, what should you think will be likely to happen? Why, the flame will be extinguished, and this I can easily prove to be the case, by a very simple contrivance.

Here is a single thread of very fine sewing cotton, I will put it in the middle of a small roll of wax, so as to make a candle in miniature. I stick it on this bit of wood, and now light it—see what a tiny flame it has! A flame, however, in every respect similar to that of the candle, size only excepted.

Here is a bit of soft brass-wire about one-eighth of an inch thick, and with these "round-nosed pliers," as the workmen call them, I twist it into a neat little ring, the inside of which is about a quarter of an inch across these. I now bring this ring down over the tiny flame so as to enclose it—look, the flame is instantly extinguished!

If I hold this large leaden bullet near the tiny flame, the same thing happens.

Why is this? Because the metal-wire robbed the flame of its heat, or cooled it so that it could no longer burn.

Even the flame of the large wax-candle may be extinguished, by a much greater mass of metal; I will snuff this wick rather short,—and now hold the large round knob of this steel-poker in the flame—there, you see it is extinguished!

Now, when metals thus take away heat from a flame or from any other hot body, they are said to *conduct* heat away. If I hold this bit of brass-wire at one end, and put the other in the flame of the candle, or into this tea-cup full of hot water, I soon feel the heat of either so plentifully *conducted* to my fingers by the wire, that I am forced to let it drop.

Metals, therefore, are called *good conductors of heat.*

There are two pieces of thick brass-wire, such as is used for stair-carpet rods, that is to say, about as thick as the biggest part of the stem of a tobacco-pipe; these pieces are about four inches long, I will place them side by side so as to leave a space between them about one-eighth of an inch; thus ═══ I can keep them at this distance apart by a bit of wood put between each end, and bound round with thread.

I now hold them over the flame of the candle; the large candle—look, it will not pass between the wires, they cool it down by their good conducting power, and I feel its heat conducted to my fingers.

I will now arrange several pieces of the *same* wire at *different* distances apart, as thus;—which you see I can easily do by sticking their ends into the holes in this bit of wood;—this contrivance looks like a gridiron with unequal spaces betwixt its bars; well, I now hold it over the flame of the candle; look, the smallest spaces effectually stop the flame! the largest spaces readily allow it to pass! If I move the little frame of wires, backwards and forwards over the flame, you see its passage, and its stoppage, very prettily.

The wires which are nearest together exert all their conducting power, and suddenly cool the flame; those which are further apart, cannot exert their conducting power to such an extent, and, therefore, the flame is not cooled so much—it passes in nearly full strength.

But it is not absolutely necessary to have such

large pieces of metal to cool the flame; thin sheets of metal will do; here is an old shilling, a farthing, and a bit of lead, nearly the same size and thickness; I will punch a round hole in the middle of them all, about one-eighth of an inch,—I now hold them with a pair of pliers, one by one over the point of the candle-flame; look, it will not pass through any of the holes; the silver, the copper, and the lead, all conduct away the heat of the flame, and cool it.

If I gradually make the holes larger and larger, I at last find that the flame will pass, because it is not cooled by the metals.

Here is a piece of tin-plate, I will punch it full of small holes, like the *rose* of a watering-pot; I will now hold it over the flames of half a dozen candles, standing close together, look, it stops all these flames!

If I had a flame of coal-gas at hand, I could show you that the tin plate would also stop it; these are simple yet beautiful experiments, and may be made even with a common nutmeg-grater.

If you go into a stable at night, especially into a country stable, you almost always find a lantern made of tin punched full of little holes; and the ostler will tell you that "it is safer than a horn lantern;" from what I have said you will see *why* it is safer.

The iron or brass wire-gauze which is now so commonly used for making window-blinds, safes, sieves, &c. is a most excellent material for helping us in this examination of flame: here is a bit of it, about six inches square; I lower it down flat upon the flame of the candle—see, it will not pass through the meshes of the gauze! Why does it not pass through? Because the metal gauze conducts away heat so quickly, and so effectually, from the flame, that the vapour of the wax is cooled so much as to be incapable of burning, it passes through *unburnt*, as you can see by its rising like a smoke, or, as I can prove to you, by holding a light to it—look, it takes fire and burns!

Wire-gauze lanterns are coming into very general use for holding night-lamps or candles; and they are much safer even than the tin stable-lantern just mentioned, because the meshes, or holes, are finer, and, therefore, the flame is yet more effectually cooled and prevented from getting through.

This fact of flame refusing to pass through small holes or wire-gauze was "not only discovered" by Sir Humphry Davy, but "he has also the sole merit of having first applied it to the very important purpose of a safety-lamp." I will briefly explain it to you.

Supposing a quantity of common coal-gas escapes into a room, and I enter with a lighted candle; the gas takes fire instantly, and it explodes with great violence; you read of such accidents now and then in the newspapers; but supposing that the lighted candle is perfectly enclosed in a wire-gauze cage, and I take it into the room full of gas, what will happen?

Why, some of the gas will get into the cage, and burn there, at the flame of the candle; but it cannot escape through the cage again as flame, so as to fire the gas outside, the gauze cools it down, and no explosion can take place.

Well then, there is a vast quantity of this sort of gas very frequently found in coal-mines, the miners call it "fire-damp;" it explodes with terrific force at the flame of a naked candle. If, however, the candle is placed in a wire-gauze cage, the "fire-damp" cannot take fire and explode; the miners can work in perfect safety.

A small lamp enclosed in a cage of wire-gauze, is found more convenient than a candle, and this forms "The Miners' Safety Lamp," or as the miners have named it, out of gratitude to its inventor, "A Davy."

Having told you thus much about the *heat* of a flame, I shall hereafter speak about its *light*.

SUNSET IN SEPTEMBER.

The sun now rests upon the mountain tops—
Begins to sink behind—is half concealed—
And now is gone: the last faint twinkling beam
Is cut in twain by the sharp rising ridge.
Sweet to the pensive is departing day,
When only one small cloud, so still and thin,
So thoroughly imbued with amber light,
And so transparent, that it seems a spot
Of brighter sky, beyond the farthest mount,
Hangs o'er the hidden orb; or where a few
Long, narrow stripes of denser, darker grain,
At each end sharpened to a needle's point,
With golden borders, sometimes straight and smooth,
And sometimes crinkling like the lightning stream.
A half hour's space above the mountain lie;
Or when the whole consolidated mass,
That only threatened rain, is broken up
Into a thousand parts, and yet is one,
One as the ocean broken into waves;
And all its spongy parts, imbibing deep
The moist effulgence, seem like fleeces dyed
Deep scarlet, saffron light, or crimson dark,
As they are thick or thin, or near or more remote,
All fading soon as lower sinks the sun,
Till twilight end. But now another scene,
To me most beautiful of all, appears:
The sky, without the shadow of a cloud
Throughout the west, is kindled to a glow
So bright and broad, it glares upon the eye,
Not dazzling, but dilating with calm force
Its power of vision to admit the whole.
Below, 'tis all of richest orange dye;
Midway the blushing of the mellow peach
Paints not, but tinges the ethereal deep;
And here, in the most lovely region, shines,
With added loveliness, the evening-star.
Above, the fainter purple slowly fades,
Till changed into the azure of mid-heaven.
Along the level ridge, o'er which the sun
Descended, in a single row arranged,
As if thus planted by the hand of art,
Majestic pines shoot up into the sky,
And in its fluid gold seem half dissolved.
Upon a nearer peak, a cluster stands
With shafts erect, and tops converged to one,
A stately colonnade with verdant roof;
Upon a nearer still, a single tree,
With shapely form, looks beautiful alone;
While, further northward, through a narrow pass
Scooped in the hither range, a single mount
Beyond the rest, of finer smoothness seems,
And of a softer, more ethereal blue,
A pyramid of polished sapphire built.
But now the twilight mingles into one
The various mountains; levels to a plain
This nearer, lower landscape, dark with shade,
Where every object to my sight presents
Its shaded side; while here upon these walls,
And in that eastern wood, upon the trunks
Under thick foliage, reflective shows
Its yellow lustre. How distinct the line
Of the horizon parting heaven and earth!—WILCOX.

NATURE AND PREPARATION OF SULPHUR.

SULPHUR, or brimstone, is a mineral that is found in various parts of the world, in great abundance; more particularly in volcanic districts. It is found, also, combined with many different substances. In iron-mines, the ore generally contains a large quantity of sulphur; this ore is called *iron pyrites*, and the sulphur may be separated from the iron by roasting; that is, by exposing the ore to a low heat. When combined with lead, the ore is called *galena*; with mercury it forms *cinnabar*.

But the greatest portion of the brimstone of commerce, is produced from sulphur-pits, which are found in countries where subterranean fires exist.

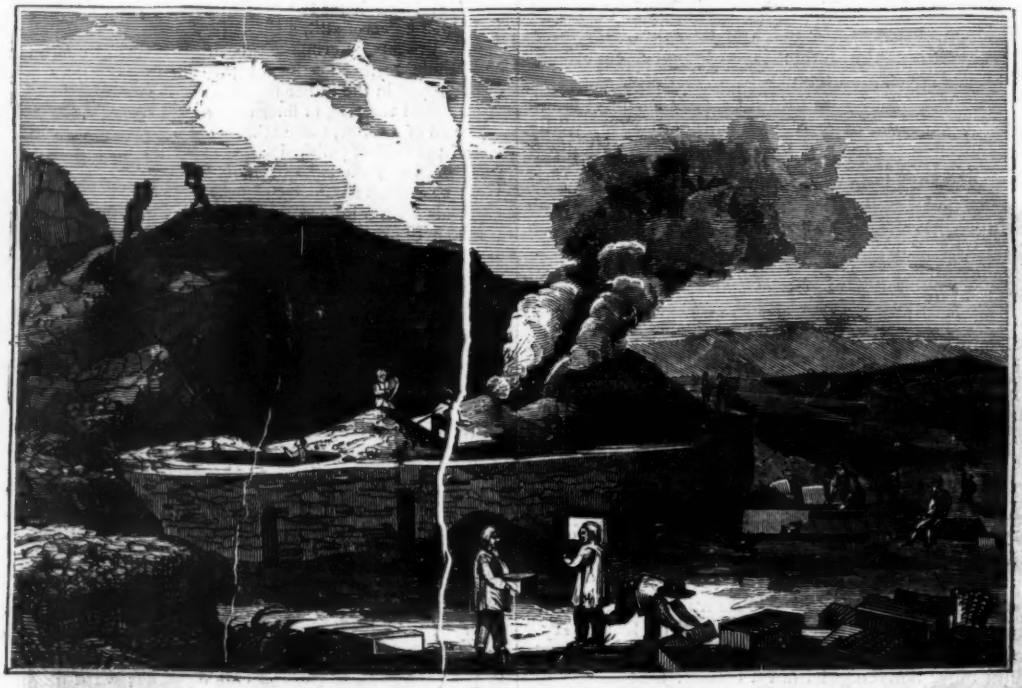
If brimstone is exposed to a certain degree of heat not sufficiently powerful to cause it to take fire, it passes off in fumes which, if condensed by cold, are deposited in the form of flower of brimstone: in this state it is extremely pure. The flower of brimstone, if examined with a microscope, appears like small, needle-shaped crystals. Brimstone, when sufficiently heated, burns with a pale-blue light. The fumes which then arise from it combine with *oxygen*, (a portion of the air,) and form sulphuric acid gas. If this is collected in a vessel containing water, it unites itself with the water, and we have sulphuric acid, (*oil of vitriol.*)

One of the most familiar employments of sulphur is in the manufacture of gunpowder: and it is also used to a great extent in medicine. In all these cases, it is of eminent service; but there is one other purpose to which it is applied, which, although it may appear trifling, is perhaps the most generally useful of all,—namely, the making of matches.

The engraving represents the method of preparing the brimstone for commerce, as it is practised in Sicily. The mine is situated about three miles from Catolica, in a small isolated mountain about 1200 feet in diameter. At first sight it appears very much like a marble-quarry; the various colours which the sulphur assumes looking like the veins in marble, as it is seen mingled with the calcareous stones of which the mountain is partially formed, and with the potters' clay and gypsum which are also found at the same place. The general ground-colour is a beautiful gray, somewhat shining. Across this ground, veins of sulphur are seen, of various colours, some much brighter than others: the deepest coloured are nearly red and transparent, like a cherry-coloured cornelian. The miners call this ore, *virgin sulphur*. Great spots of black are also seen; these are the clay combined with sulphuric acid: in the midst of these black masses, hollows are found, partly filled with beautiful crystals of gypsum, of many varieties, some of a beautiful white, some black, others gray, and others violet or yellow.

The mountain is quarried for the purpose of obtaining the brimstone, and the fragments collected are thrown together in a heap. The ore is then subjected to the action of heat: this is effected in the following manner:—A row of round furnaces is formed, which resemble great cauldrons, six or seven feet in diameter, and four or five in depth. A small opening is made in the front of each of these furnaces, which is closed up with earth, tempered with a little water. This being done, the largest of the sulphurous stones (in the first instance) are placed on a little ledge, which goes round the bottom of the furnace. Stones of smaller and still smaller size are then employed; and a kind of vault or cupola is formed, having at the summit a small hole. Very small stones are now thrown over it, and at last merely the dust of the ore, so that a kind of pyramid is formed. When the ore is thus arranged, a kind of conical band is formed round the base of this pyramid, of very fine earth: this belt is about six or eight inches in width, and prevents the vapour of the sulphur escaping too easily from the bottom of the furnace.

A large handful of straw is placed over the pyramid, and set on fire. This inflames the outer part of the pyramid, and the fire soon extends to the interior. When the fire has continued for seven or eight hours, the sulphur has been extracted from the ore, and is found at the bottom of the furnace in a liquid state. A small hole is then made, with a round bar of iron, through the mud with which the opening in front of the furnace has been stopped: through this hole the sulphur runs, and is received in moulds of wood, which are previously moistened to prevent the sulphur adhering. In fifteen minutes it is sufficiently solid to allow of its removal from the mould.



SULPHUR BURNING IN SICILY

LONDON: Published by JOHN WILLIAM PARKER, West Strand; and sold by all Booksellers.